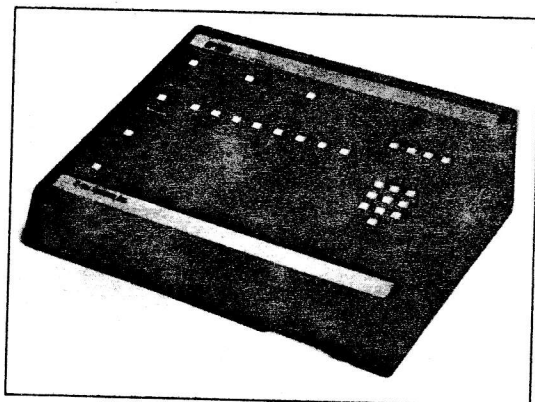
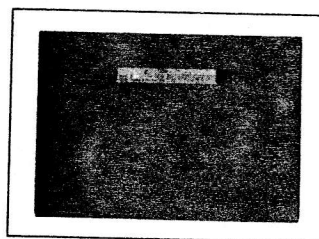


DRUM MACHINES

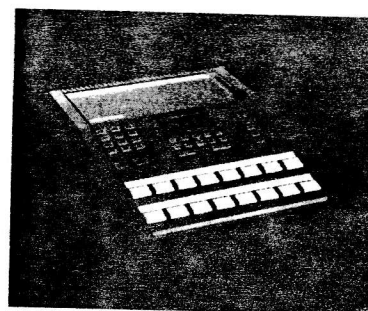
by Bob Saydlowski, Jr.



E-mu SP1200



Roland R-8



Alesis AR-16

In days of yore, drummers-in-a-box were delegated to the cheesy rhythm sections inside Hammond organs and their kin. The MiniPops, Jr. was the first generation of stand-alone rhythm boxes, followed later by Roland's CR-78, which was the first user-programmable drum machine.

Drum machines have made big strides in recent years. PCM-encoded sounds are now widely used and preferred over the EPROMs of the Linn LM-1. Digital technology and the advent of midi have created some truly sophisticated machines that sound ultra-professional and operate on high-tech levels. Let's look at some of the options you'll want to consider when you go shopping.

The Sound's The Thing

The clarity of a particular drum sound depends greatly on its sampling rate. Today's machines contain 8-bit, 12-bit, or 16-bit sounds. 16-bit samples are CD quality, and are the best currently available. Consider what sounds you'll need for your projects. Some machines offer only the "typical" drum sounds, while others (such as E-mu's SP-1200, and Yamaha's RX8 and RX7) also contain "tuned" instruments such as bass, guitar, synth, electric guitar, orchestra,

etc. Some also offer effected drum sounds, like gated drums, ambient drums, reverbed drums, and so on. You may prefer to add outboard effects in the studio mix (or at the soundboard) instead.

Some machines are capable of loading in alternate sounds via disk, cartridge, or memory card. The sounds contained on these formats, of course, are only beneficial if you can truly use them. The greatest sound library is for E-mu's SP-1200, with 20 disks presently available, providing over 500 sounds. If you don't like prepackaged sounds, or want to explore whacked-out possibilities of your own invention, there's the option of user-sampling on some machines.

Inputting

To program sounds, all drum machines are equipped with a number of push-buttons. Velocity-sensitive buttons are generally better than non-dynamic: The harder you tap the button, the louder the sound, which can save time when creating a pattern with varied dynamic nuances. Being able to assign voices to particular buttons allows you to create the drumkit format you want for easier real-time programming.

Individual tuning is a big plus: Even machines with fewer voices sometimes offer tunability, so you can wind up with more sounds by raising or lowering pitch.

Some machines have programmable patterns plus factory preset patterns. If you have no rhythmic aptitude or creativity, then the presets can be quite useful (some are even hip). However, you give up programmable memory space on a machine featuring 100 user-programmable patterns. It's a question of how many "custom made" patterns you need.

Warehousing

Memory storage capacity must be taken into account whether you're planning to use the machine live or in the studio. Internal memory can hold so only much information. If you have the need to save a huge number of patterns, songs, or voices, many machines have some sort of external data storage and retrieval, via floppy disk, memory card, cassette tape, or midi dump. Cards and disks are the easiest to carry around and use (and lose). Cassette tape is the dinosaur of all storage methods - it's slower to load in and is susceptible to stretching and breaking.

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Battle of the Brands

LEGEND: T=TAPE NP= NO PROGRAMMABLE MC=MEMORY CARD D=DISK

MAKE	MODEL	No. OF SOUNDS	PROGRAM PATTERNS	SONGS	EXT. DATA STORAGE	SPECIAL FEATURES	PRICE
AKAI	MPC60	34	99	20	D	Enhanced 12-bit samples, 3 are triggered by the hi-hat pad 32 channel programmable stereo drum mixer, 8 assignable individual mix outputs, 60,000 note midi sequencer, 320 character LCD, auto locate function, hi-hat decay, "fade-out" feature, 7 sync modes include SMPTE, midi time code, and midi clock with Song Position Pointer.	\$3275
ALESIS	HR-16	49	100	100	T	16-bit samples, full midi pan, volume, pitch, programmable sound selection per pad, per pattern, velocity sensitive pads.	\$449
ALESIS	HR-16B	47	100	100	T	Has same features as HR-16 but with different, stylized samples, including pre-processing and sound effects. Software update chip allows setup with HR-16. Recommended the HR-16 and 16B be used as a system, allowing user to copy patterns and songs from one machine to the other.	\$499
BOSS	DR220A	13	32	8	—	11 digital sounds, 32 preset patterns, 32 programmable, up to 128 measures in 8 songs, trigger in/out jacks.	\$220
E-MU	SP-1200	32	100	100	D	12-bit linear samples, 120 sounds on 5 x 3.5 disks, 10 seconds of RAM sampling (four 2.5 second blocks), on-board disk storage, full midi, SMPTE, real-time parameter control, 20+ disk available from Sound Library, plus 3rd party sound developers (Northstar, etc.), and midi song pointer.	\$2995
KAWAI	R-50	24	100	10	T	12-bit samples, alternate sound chips available. Built-in flange, delay, (all programmable). Pads programmable for volume, accent pitch, pan, effects. Full midi, tape interface/midi sound dump.	\$499
KORG	DRM-1	23	100	16	MC	8-bit and 12-bit samples, 4 ROM memory card slots, one accepts RAM storage card. Sounds organized into 16 sets containing pad, trigger, or midi assignments, tuning, decay, level, layering, flange effects, 8 outputs.	—
KORG	S3	64+	100	30	MC	16-bit ROM sounds, 8-track sequencer with 4 patterns and 4 real time tracks, 2 internal multi digital effect sections, 8 stage digital amplitude envelopes, reads and writes SMPTE, 2 ROM card and 1 RAM card slot, stereo plus 4 polyphonic outputs. Full midi. The S3 will ship in November.	—
ROLAND	TR-505	16	48	6	T	16 PCM sounds, six accent levels, 48 preset patterns, tape interface.	\$350
ROLAND	TR-626	30	48	6	MC	30 PCM samples, all tuneable, 48 preset patterns. Memory card saves up to 144 patterns and 18 songs. 8 outputs, tape sync, trigger out, 2 stereo outputs.	\$495
ROLAND	R-5	68	100	8	T	"Human feel" functions, 16-bit samples, 26 additional sounds via parameter alteration, 32 presets, 4 outputs, 2 stereo outputs, nuance, roll, flam and swing controls, velocity & aftertouch sensitive pads, artificial intelligence.	\$695
ROLAND	R-8	68	100	10	MC	16-bit samples, 26 additional sounds via parameter modifications, 26 via ROM card load. 99 measures for each pattern, 32 presets, 2 ROM/RAM card slots. 8 individual outputs, 2 stereo outputs, nuance, roll, flam, swing controls. Artificial Intelligence and human feel functions, velocity and aftertouch sensitivity pads.	\$995
SUZUKI	RPM40	13	NP	—	—	40 preset rhythms, not programmable, but divisible into verse/chorus. Two variations, two break patterns, intro beats. One button automatic swing, midi.	\$169
YAMAHA	RX-120	38	NP	20	—	38 internal ROM voices, 40 preset patterns, 3 variations each.	\$350
YAMAHA	RX-8	43	100	20	T, MC	16-bit samples, 43 sounds, all tuneable. Midi, optional memory card for storage, tape sync, midi sync, two individual outputs, plus stereo outputs, cassette storage, midi dump.	\$495
YAMAHA	RX-7	100	100	20	T, MC	12-bit samples, 3 song chains, full midi, stereo outputs, midi sync, RAM 4, or RAM 5 cartridge.	\$895
YAMAHA	RX-5	64+	100	20	MC	12-bit samples, 24 ROM voices, 12 RAM voices, 28 voices on Waveform Data Cartridge, 3 song chains, voice and note editing, full midi, 12 individual outputs, stereo outputs.	\$1315

Chart based on information provided by manufacturers

Buyers Guide...

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For the live user, the more songs (pattern chains) the machine can hold, the better. For studio use, a large number of songs probably will not need to be saved in memory — perhaps only a few at a time.

Program Variables

Of course, you'll want your drum machine to accommodate various tempos, and they all do, no problem. But not all can store tempo settings along with the patterns or songs, which can be crucial if a certain song has tempo changes. Different methods are used to set tempo — by entering a numerical value, adjusting an audible click sound, or tapping in a tempo via a key pad.

Certain machines can also store various parameters like volume, pitch, stereo pan, accents, and effects. The more functions that can be stored in the program simplifies "on the job" use, when you may not have a hand free to punch in parameters.

Message Message

There are two main categories of functions: efficiency and modification. Under the efficiency banner, the ability to copy a specific pattern into another location will definitely save time (versus having to input the pattern manually each time), as will being able to edit (insert or delete) certain notes of copied patterns.

Real-time programming writes a pattern into memory as you rhythmically play the buttons "live." Step-time programming proceeds note by note. Some machines have only one method, some have both. Having both methods on board can be invaluable when trying to write in a complex rhythm.

Modifiers include the basic auto-correct function, found on all programmable units. This quantizes any irregular playing to the nearest eighth, sixteenth, thirty-second, triplet note, etc., to make up for any timing errors at input. On some units, human feel, or "swing," can be programmed in, to move the sounds before or after the beat in certain minute amounts, as a live drummer would, to help the groove flow more naturally.

Outputs are of special importance if you'll be using the machine for recording. The more individual sound outputs, the more individual processing you can give to each voice — you can put reverb on the snare, but keep the kick dry, for example. All the current machines will at least give you left/right stereo outputs, and if panning can be programmed, of the keypads, and the relation of your

fingers on them. And, of course, a well-documented owner's manual will simplify all functions.

Bob Saydlowski, Jr. is a drummer on the East Coast, and a regular contributor to Gig and other magazines.

Seymour...

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One thing I liked about this pickup was that, unlike normal active pickups, it could be used in conjunction with passive (non-battery powered) pickups. This was

nice in my case, because I could still keep my Strat neck pickup and its blues sound, then hit the switch and fly into overdrive.

After playing all three of these pickups, I feel lucky to have more than one guitar. I liked all three sounds, and this makes me sorry for those who have only one guitar. The decisions they'll have to face are going to be tough. So many great pickups, so few guitars.

Special thanks to Bill Asher, Asher Guitar Works, at Ace Music in Santa Monica, Calif., for his help with the pickups. **Circle 42** for more information.

— Daren Klingl

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